Patent Claims

1.   A device for predicting the mean time period between two failures of a technical system, which comprises:

-    an electronic components list (130.1, 130.2) which lists all the maintenance-intensive components of the technical system, with each failure of a component on the list (130.1, 130.2) leading to a failure of the system,

-    an apparatus for acquiring setpoint MTBF values for the components of the components list (130.1, 130.2),

-    an apparatus for summing all the reciprocal values of the setpoint MTBF values which are acquired for the components of the components list (130.1, 130.2),

-    and an apparatus for calculating the reciprocal value of the sum of the reciprocal values, with the reciprocal value of the sum of the reciprocal values being the mean time period to be predicted between two failures of a technical system.

2.   The device as claimed in claim 1, characterized in that the device comprises:

-    an apparatus for acquiring setpoint MTTR values for the components of the components list (130.1, 130.2),

-    and an apparatus for predicting the mean time period for fault recovery after a failure of the technical system,

      which calculates the mean time period as a weighted mean of the acquired setpoint MTTR values of the components of the components list (130.1, 130.2),

      in which the reciprocal values of the setpoint MTBF values of the components of the components list (130.1, 130.2) are used as weighting factors.

3.   The device as claimed in claim 2, characterized in that the apparatus for acquiring the setpoint MTTR values comprises:

-    means for acquiring setpoint MRT values and setpoint MTD values of the components of the components list (130.1, 130.2) and

-    means for calculating the setpoint MTTR value of a component by summing the

setpoint MRT value and the setpoint MTD value of the component.

4.   The device as claimed in one of claims 1 to 3, characterized in that the device comprises:

-    an electronic parts list (120.1, 120.2) which describes decomposition of the system into its components,

-    an apparatus for characterizing a component as maintenanceintensive,

-    and an apparatus for generating the components list (130.1, 130.2) by determining all the components of the parts list (120.1, 120.2) which are characterized as maintenanceintensive.

5.   The device as claimed in one of claims 1 to 4, characterized in that

-    the components list (130.1, 130.2) is valid for a category of technical systems which carry out the same functions,

-    and the device comprises an apparatus for generating a comparison of a plurality of systems of the category,
    in which the comparison comprises the mean time period, predicted for each system, between two failures of the system.

6.   The device as claimed in claim 5, characterized in that the comparison-generating apparatus comprises means for generating in each case one partial comparison of the predicted failure frequencies for each component of the components list (130.1, 130.2) in the plurality of systems.

7.   The device as claimed in one of claims 4 to 6, characterized in that the electronic parts list (120.1, 120.2) is valid for a category of technical systems which carry out the same functions.

8.   A method for predicting the mean time period between two failures of a technical system, in which an electronic components list (130.1, 130.2) which comprises the maintenance-intensive components of the technical system is predefined, in which each

failure of a component of the components list (130.1, 130.2) leads to a failure of the system,

and the method comprises the following steps which are carried out using an electronic data processing system,

- acquiring of a setpoint MTBF value for each component of the components list (130.1, 130.2),

- summing of all the reciprocal values of the setpoint MTBF values acquired for the components of the components list (130.1, 130.2), and

- use of the reciprocal value of the sum of the reciprocal values as a mean time period which is to be predicted between two failures of the technical system.

9.   The method as claimed in claim 8, characterized in that the method additionally comprises the following steps:

- additionally acquiring a setpoint MTTR value for each component of the components list (130.1, 130.2), and

- calculating of a prediction of the mean time period for fault recovery in the technical system as a weighted mean of the acquired setpoint MTTR values of the components of the components list (130.1, 130.2),

  in which the reciprocal values of the setpoint MTBF values of the components of the components list (130.1, 130.2) are used as weighting factors.

10.   The method as claimed in claim 9, characterized in that when the setpoint MTTR value of at least one component is acquired the following steps are carried out:

- acquiring of a setpoint MRT value and of a setpoint MTD value of this component, and

- use of the sum of the setpoint MRT value and setpoint MTD value of this component as a setpoint MTTR value of this component.

11.   Method according to one of claims 8 to 10, characterized in that

- the components list (130.1, 130.2) is valid for a category of technical systems which

carry out the same functions,

- the prediction is made for a plurality of systems of the category,

- and a comparison of the predicted failure frequencies and down times of the plurality of systems is generated.

12. The method as claimed in claim 11, characterized in that a partial comparison of the predicted failure frequencies and down times in the plurality of systems is generated for each component of the components list (130.1, 130.2) during the generation of the comparison and is inserted into the comparison.

13. The method as claimed in one of claims 8 to 12, characterized in that, for each component of the components list (130.1, 130.2),

- the actual times at which this component fails are logged,

- and this component is compared with the acquired setpoint MTBF value.

14. A computer program product which can be loaded directly into the internal memory of a computer and comprises software sections with which a method as claimed in one of claims 8 to 13 can be carried out if the product is running on a computer.

15. A computer program product which is stored in a medium which can be read by a computer, and which has a programming means which can be read by a computer, said means causing the computer to carry out a method as claimed in one of claims 8 to 13.